

## MEMORANDUM

**TO:** Toni Jones, U.S. Environmental Protection Agency  
**FROM:** Eastern Research Group, Inc.  
**DATE:** November 18, 2011  
**SUBJECT:** CISWI Reconsideration – Data Review and Updates

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### 1. BACKGROUND

The U.S. Environmental Protection Agency, under section 129 of the Clean Air Act (CAA), is required to regulate emissions of nine pollutants from Commercial and Industrial Solid Waste Incineration (CISWI) units: hydrogen chloride (HCl), carbon monoxide (CO), lead (Pb), cadmium (Cd), mercury (Hg), particulate matter (PM), dioxins/furans (PCDD/PCDF), nitrogen oxides (NO<sub>x</sub>), and sulfur dioxide (SO<sub>2</sub>).

On December 1, 2000, the EPA adopted new source performance standards (NSPS) and emission guidelines (EG) for CISWI units under Sections 111 and 129 of the Clean Air Act. In 2001 the EPA granted a petition for reconsideration regarding the definitions of "commercial and industrial waste" and "commercial and industrial solid waste incineration unit." In 2001, the United States Court of Appeals for the District of Columbia Circuit granted the EPA's voluntary remand, without vacatur, of the 2000 rule. In 2005, the EPA proposed and finalized the commercial and industrial solid waste incineration definition rule which, among other things, revised the definitions of "commercial and industrial waste" and "commercial and industrial waste incineration unit." In 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded the 2005 commercial and industrial solid waste incineration definition rule.

On March 21, 2011, the EPA promulgated revised NSPS and EG as its response to the voluntary remand that was granted in 2001 and the vacatur and remand of the commercial and industrial solid waste incineration definition rule in 2007. In addition, the standards re-development included the 5-year technology review of the new source performance standards and emission guidelines required under Section 129. Following that action, the Administrator received petition[s] for reconsideration and identified some issues that warranted further opportunity for public comment. In addition, data were received that enabled the EPA to revise the CISWI inventory of waste-burning kilns and energy recovery units to more accurately reflect the definition of non-hazardous secondary materials.

This memorandum summarizes the activities associated with data reviews and database updates to the CISWI data set as part of CISWI reconsideration. In particular, these reviews and updates consist of the following activities:

- The dioxin/furan emissions data in the CISWI database were reviewed to ensure that data have been correctly characterized as being "above detection level" or "non-detect."
- The mercury emissions data for the CISWI units within each MACT floor, excluding waste-burning kilns, were reviewed to confirm that the facility used the summation of the fractions of mercury and the associated detection level instead of assigning the non-detect fractions of mercury as zero prior to the summation of the individual fractions.

- The filterable particulate matter emissions data for the CISWI units within each floor were reviewed to confirm the treatment of negative filter weights. If encountered, the negative filter weights were treated as zeros.
- Updates were made to the waste-burning kiln and energy recovery unit subcategories of the CISWI data set.

## **2. DIOXIN/FURAN DATA REVIEW**

### **2.1. DATA REVIEW PROCEDURES**

In order to verify the dioxin/furan emissions data and the associated detection designations, the original test reports submitted by each facility with dioxin/furan data were reviewed and the following data components were confirmed and corrected, if necessary.

- The non-detect designation,
- Source of TEQ dioxin/furan data, and
- Emissions data.

The non-detect designation was reviewed by comparing the dioxin/furan emission records in the CISWI database to the emission test reports to confirm whether or not it was noted appropriately in the “Non Detect” and “ND Count” fields. Also, it was noted if a more specific non-detect designation was reported in the test report: above detection limit (ADL), below detection limit (BDL) or detection limit limited (DLL). For purposes of data use in emission limit calculations in CISWI, BDL and DLL are synonymous with non-detect (ND).

The TEQ dioxin/furan data was reviewed in order to determine whether or not the TEQ data was calculated and submitted by the facility or calculated by ERG from the mass basis data for the isomers. This observation was noted in the CISWI database under a comment field.

While the emissions test database was originally reviewed to ensure that data were imported accurately, this task repeated this quality assurance check to confirm that dioxin/furan data were imported into the database correctly.

### **2.2. RESULTS**

The accompanying spreadsheet in Appendix A identifies which units required dioxin/furan non-detect designation corrections. The fields “Dioxin/Furans (Total Mass Basis): Correction Required? (Y/N)” and “Dioxin/Furans (TEQ): Correction Required? (Y/N)”, identifies whether or not any of the dioxin/ furan records for the associated unit required corrections to the non-detect designations.

### **3. MERCURY DATA REVIEW**

#### **3.1. DATA REVIEW PROCEDURES**

In order to verify the Hg emissions data and to confirm that the facility used the summation of the fractions of Hg and the associated detection level as opposed to assigning the non-detect fractions of Hg as zero prior to the summation of the fractions, the original test reports submitted by each facility were reviewed and confirmed and/or corrected for CISWI units within each floor excluding waste-burning kilns.

- Fractions of Hg,
- The non-detect designation, and
- Emissions data.

The fractions of Hg were reviewed by identifying within the emission test reports submitted by each facility the fractions of Hg to see if the facility had used a summation of total Hg and the associated non-detect designation, as opposed to assigning the non-detect fractions of Hg as zero prior to the summation.

Similarly to the dioxin/furan data review, the detection designation was examined to confirm that each designation was noted appropriately in the “Non Detect” and “ND Count” fields.

While the emissions test database was originally reviewed to ensure that data were imported accurately, this task repeated this quality assurance check to confirm that Hg data were imported into the database correctly.

#### **3.2. RESULTS**

For mercury records associated with facilities within the MACT floor pool, 2 units out of 10 required corrections. The AKCoeur incinerator (subcategory = small remote) emissions were recalculated to ensure the emissions were correct. The average emission detection designation for the AKCoeur unit was updated from detect to the non-detect designation, due to the detection designations of the runs that were averaged. The emission detection designation for Run 1 for the ALIPRiverdale No. 2 Bark Boiler was updated from non-detect to detect because it was reported as above detection levels in the emissions test report. The emission detection designation for the average emissions for the ALIPRiverdale No. 2 Bark Boiler were updated from detect to non-detect because run 3 was below the detection level.

No corrections were needed for the fractions of Hg. Each facility in this review followed the proper protocol of using the summation of the fractions to determine the detection limit, or did not submit the fractions of Hg in the first place.

### **4. FILTERABLE PARTICULATE MATTER DATA REVIEW**

#### **4.1. DATA REVIEW PROCEDURES**

In order to verify the filterable particulate matter (PM) emissions data and to confirm that the facility appropriately assigned zeros to negative filter weights, the original test reports submitted by each facility with PM data in the MACT floor were reviewed and confirmed and or corrected if needed for the following data elements:

- PM catch amounts,
- Treatment of negative filter weights,
- The non-detect designation, and
- Emissions data.

The PM catch amounts and treatment of negative filter weights within the emission test reports submitted by each facility were reviewed to see if the values were less than 1 mg and or negative, respectively. If the catch amounts were less than 1 mg per sample, they were assigned the MDL value of one. If the filter weights were negative, they were treated as zero.

Similarly to the dioxin/furan data review, the detection designation was examined to confirm that each designation was noted appropriately in the “Non Detect” and “ND Count” fields.

While the emissions test database was originally reviewed to ensure that data were imported accurately, this task repeated this quality assurance check to confirm that PM data were imported into the database correctly.

## **4.2. RESULTS**

No corrections were needed for the PM emissions data in this review. The PM catch amounts were all above 1 mg, and the filter weights were all positive. No corrections were needed for the emissions data and the detection designations, ensuring the quality of the dataset for those facilities within the MACT floor.

## **5. CISWI INVENTORY UPDATES**

### **5.1. WASTE-BURNING KILNS**

Updates to the dataset include the addition of 4 facilities (11 kilns) to the waste-burning kiln subcategory of CISWI units. The additional kilns were identified as being solid waste-combusting kilns during review of the Portland cement kiln population for the development of the emission standards for hazardous air pollutants (PC NESHAP). See Appendix B for more details on this review. Appendix C contains the PC NESHAP data that were used to populate the CISWI database for kiln design type and the newly added kilns (highlighted in yellow). The following kiln facilities were added to the CISWI database:

- California Portland Cement Company (Colton, CA),
- Lehigh Cement (Union Bridge, MD),
- Lafarge Midwest Inc. (Alpena, MI), and
- Ash Grove Texas, L.P. (Midlothian, TX).

### **1.1. ENERGY RECOVERY UNITS**

Updates to the energy recovery unit subcategory of the CISWI data set include the addition of data for one facility that was identified by industry as a possible waste combustor, Wheelabrator Shasta Energy Company (Anderson, CA) and removal of data for five facilities that were identified as units that no longer burn waste materials. The non-waste energy recovery units data were transferred to the industrial

and commercial boiler inventory for use in developing standards for that source category. For the Wheelabrator unit, the previously-submitted data were re-incorporated into the CISWI data set. In addition, new data were submitted to the EPA early in 2011. These data are provided in Appendix D. Note that these data include data from several boiler units that the submitters believed could be potential CISWI units. The EPA reviewed this information, and concluded that the Wheelabrator units are most likely CISWI, while the others units in the data submittal have more uncertain applicability status. Therefore, only the Wheelabrator facility was added to the CISWI population and the others were incorporated into the boiler population.

The following units were CISWI energy recovery units as of promulgation of the final rule, but have now been transferred to the industrial and commercial boilers population after being identified as non-waste burning units:

- Black River Generation, LLC (Fort Drum, NY),
- Kimberly-Clark of PA, LLC (Chester, PA),
- Herman Miller, Inc. (Zeeland, MI),
- Boralex – Livermore Falls (Livermore Falls, ME), and
- Port Townsend Paper Corp. (Port Townsend, WA).